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determining a maximum frequency which provides power not greater than the allowable power consumption level,

determining a minimum voltage which allows operation at the maximum frequency determined, and

dynamically changing the operating condition of the processor by changing one of the frequencies generated by the clock generator and the voltage to the maximum frequency and minimum voltage determined.

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Claim 2 (amended). A computing device comprising:

a power supply furnishing selectable output voltages,

a clock frequency source,

a central processor including:

a processing unit for providing values indicative of operating conditions of the central processor, and

a clock frequency generator receiving a clock frequency from the clock frequency source and providing a one of a plurality of selectable output clock frequencies to the processing unit; and

means for detecting the values indicative of operating conditions of the central processor and causing the power supply and clock frequency generator to furnish an output clock frequency and voltage level for the central processor and to generate concurrently frequencies which are selected for optimum operation of a plurality of functional units of the computing device.

Claim 6 (twice amended). A method for controlling the power used by a computer comprising the steps of:

utilizing control software to measure the operating characteristics of a central processor of the computer,

determining when the operating characteristics of the central processor are significantly different than required by the operations being conducted, and

changing the operating characteristics of the central processor to a level commensurate with the operations being conducted in which:

the step of determining when the operating characteristics of the central processor are significantly different than required by the operations being conducted comprising utilizing the control software to determine desirable voltages and frequencies for the operation of the central processor based on the measured operating characteristics, and

the step of changing the operating characteristics of the central processor to a level commensurate with the operations being conducted comprises providing signals:

for controlling voltages furnished by a programmable power supply to the central processor,

for controlling frequencies furnished by the central processor to the central processor, and

providing signals for controlling frequencies furnished by the central processor to other functional units of the computer.

Claim 8 (amended). A computer comprising:

a power supply furnishing selectable output voltages,

a clock frequency source,

a bus,

system memory,

a central processor including:

a processing unit for providing values indicative of operating conditions of the central processor, and

a clock frequency generator receiving a clock frequency from the clock frequency source and providing a plurality of selectable output clock frequencies to the processing unit; and

means for detecting the values indicative of operating conditions of the central processor and causing the power supply and clock frequency generator to furnish an output clock frequency and voltage level for the central processor and to generate concurrently frequencies which are selected for optimum operation of a plurality of functional units of the computing device including system memory.

Claim 10 (amended). A computing device as claimed in Claim 8 in which the means for detecting the values indicative of operating conditions of the central processor causes the clock frequency generator to generate frequencies which are selected for optimum operation of system memory.

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Claim 11 (amended). A computing device as claimed in Claim 8 in which the means for detecting the values indicative of operating conditions of the central processor causes the clock frequency generator to generate frequencies which are selected for optimum operation of the bus.